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# MSMR

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## Medical Surveillance Monthly Report

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*Data in the MSMR is provisional, based on reports and other sources of data available to the Medical Surveillance Activity. Notifiable conditions are reported by date of onset (or date of notification when date of onset is absent). Only cases submitted as confirmed are included.*

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*Annual summary***Cold Weather Injuries in Active Duty Soldiers, 1995-6**

During calendar years 1995 and 1996, there were 293 cold weather injuries (CWI) among active duty soldiers reported to the Army's Medical Surveillance System (MSS). This report summarizes demographic characteristics of cases and compares the experience of 1995 to 1996.

To determine the significance of relative excesses or deficits of CWI in various demographic subgroups, we compared reported ("observed") numbers of cases to "expected" cases. Expected numbers of cases were calculated based on the hypothesis that CWI would distribute among demographic subgroups of the Army in proportion to their representation in the general population of the Army. Thus, expected numbers of cases for various subgroups were calculated by multiplying the proportional representation of each subgroup in the Army by the total number of reported CWI cases. The statistical significance of variations between "observed" and "expected" numbers were then assessed based on the Poisson distribution (statistical significance was defined as  $p < .05$ ).

*General:* There were 119 CWI cases reported in 1995 and 174 in 1996. This represents a 46% increase between the years. Of all cases reported, 224 (76%) were frostbite, 29 (9.9%) were immersion-type, 9 (3.1%) were hypothermia, and 31 (10.6%) were unspecified. The proportions of CWI by type were relatively consistent between the years except there were no hypothermia cases reported in 1996.

*Residence prior to entering Army service:* Military Entrance Processing Station (MEPS) records documented states of residence prior to entering Army service for 236 of the 293 CWI cases. Figure 1 (see page 3) shows the geographic distribution of cases by pre-induction states of residence. The highest number of cases occurred among soldiers from Georgia (24), Florida (22), California (21), Texas (17), New York (14), and Illinois (12). Statistically significant excesses of cases occurred among soldiers from Georgia (14 more than expected) and Alabama (6 more than expected). Analyses of pre-induction states of residence were conducted separately for Black, White, and Other racial/ethnic subgroups. There were statistically significant excesses of CWI cases among Black soldiers from Georgia, Florida, Alabama, New York and Massachusetts. Among White soldiers, there were no states of prior residence that had significantly increased CWI cases; however, there were significantly fewer CWI cases than expected among White soldiers from Texas. Finally, for

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*Executive Editor*

John F. Brundage, MD, MPH

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Activity, USACHPPM

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---

*Prepared by the Medical Surveillance Activity, Directorate of Epidemiology and Disease Surveillance, United States Army Center for Health Promotion and Preventive Medicine. Inquiries regarding content or material to be considered for publication should be directed to the editor, MAJ Mark Rubertone, Army Medical Surveillance Activity, Bldg. T-20, Rm 213, Washington DC, 20307-5100.*

*E-mail: "maj\_mark\_rubertone@wrsmtm-ccmail.army.mil"*

*Publishing office is the Executive Communications Division, U.S. Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, Maryland 21010-5422.*

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Other racial/ethnic subgroups (i.e., not Black or White), there were significantly more CWI cases than expected among soldiers from Texas.

**Gender:** Figure 2 (see page 7) summarizes frequencies of CWI among males and females. Between 1995 and 1996, CWI cases rose among men but slightly decreased among women. While females constitute approximately 14% of the active Army, 21% of all cases were reported among females. In 1995 and 1996 respectively, 27% and 17% of CWI were reported among females. The excess of CWI among females in 1995, but not 1996, was nominally statistically significant.

**Race/ethnicity:** Figure 3 (see page 7) shows frequencies of CWI in 1995 and 1996 among soldiers by racial/ethnic subgroups. Case reports increased between 1995 and 1996 in all subgroups except Hispanic. In both 1995 and 1996, cases among Black soldiers exceeded by approximately twofold their representation in the active force. The relative excesses of CWI among Black soldiers, by

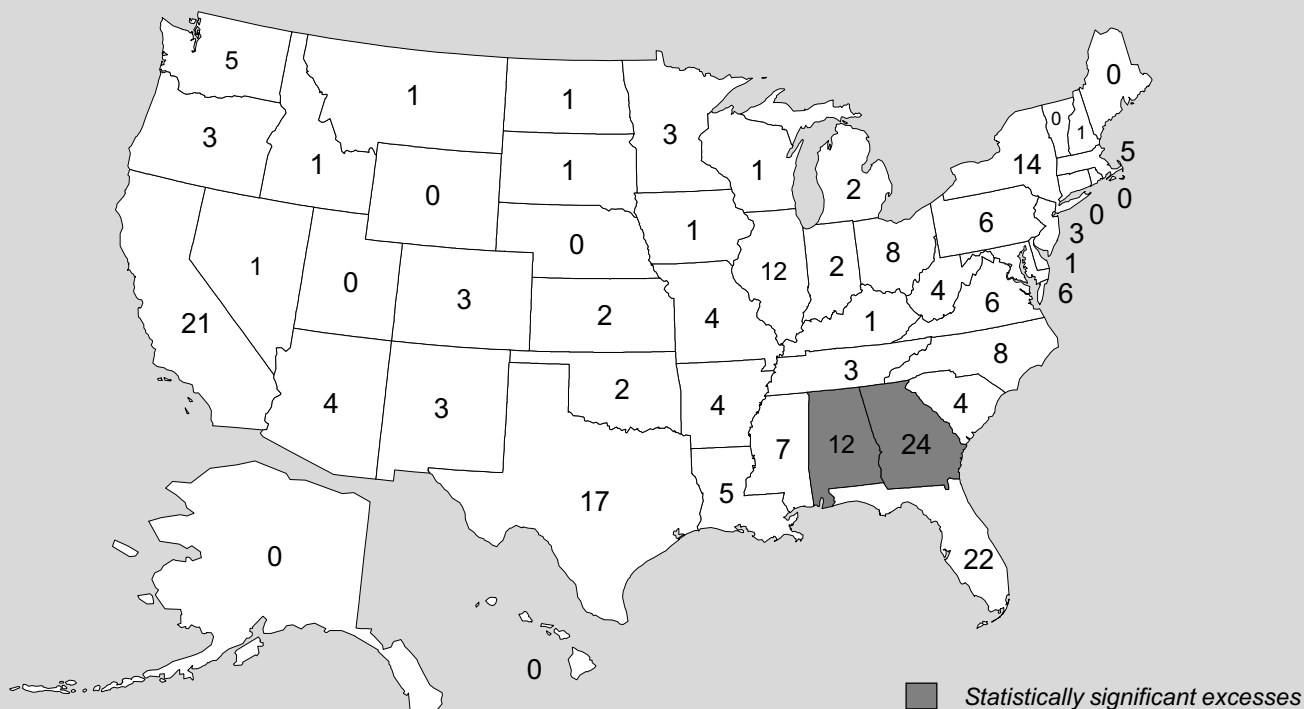
year and overall, were statistically significant.

**Age:** Figure 4 (see page 7) shows the number of CWI cases in 1995 and 1996 by age categories. In each category except the youngest (<20 years), there were more cases in 1996 than in 1995. In relation to their representation in the Army, there were relative excesses among soldiers in their twenties (20-24, 25-29) and relative deficits among older soldiers.

**Summary:** There were more cold weather injuries reported in 1996 than 1995. It is difficult to judge the significance of this increase since it may reflect, at least in part, more complete ascertainment of CWI by Army preventive medicine staffs and better compliance with reporting. It is clear, however, that CWI remains an important threat to the health and operational effectiveness of soldiers. It is not surprising that Black soldiers and those in their twenties had relatively increased risks of CWI compared to others. It is well documented that Black soldiers have greater CWI risk than

*Continued on page 7*

**Figure 1. Geographic distribution of cases by pre-induction states of residence.**



**TABLE I. Cases of selected notifiable conditions, United States Army\*  
December, 1996**

Reporting MTF/Post**	Total number of reports submitted Dec-96	Environmental Injuries			Viral Hepatitis			Malaria	Varicella	
		Active Duty		CO intox.				Active Duty	Active Duty	Other Adult
		Heat	Cold		A	B	C			
		Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996
NORTH ATLANTIC RMC										
Walter Reed AMC	68	1	-	-	2	1	-	1	7	2
Aberdeen Prov. Ground	2	1	3	-	-	-	-	-	-	-
FT Belvoir, VA	-	1	-	-	1	1	-	-	-	-
FT Bragg, NC	17	18	7	-	1	-	-	4	-	-
FT Drum, NY	43	6	22	-	-	1	-	1	6	-
FT Eustis, VA	-	2	-	-	1	-	-	-	-	1
FT Knox, KY	-	-	2	-	2	2	7	-	-	-
FT Lee, VA	10	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	-	1	-	2	-	1	-	9	1
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-
CENTRAL RMC										
Fitzsimons AMC	-	-	-	-	-	-	-	1	-	-
GREAT PLAINS RMC										
Brooke AMC	-	-	-	-	-	-	-	1	-	-
FT Carson, CO	-	-	32	-	1	4	-	-	1	-
FT Hood, TX	-	2	1	-	1	3	-	-	6	-
FT Leavenworth, KS	7	-	-	-	-	-	2	-	-	-
FT Leonard Wood, MO	6	1	2	-	1	1	-	-	17	5
FT Polk, LA	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	3	1	-	-	-	-	-	-	-	-
FT Sill, OK	124	4	1	-	7	6	3	-	-	-
Panama	17	3	-	-	4	4	3	-	-	1
SOUTHEAST RMC										
Eisenhower AMC	158	2	-	-	-	2	-	-	2	-
FT Benning, GA	-	8	-	-	-	-	-	-	9	-
FT Campbell, KY	43	3	2	-	3	1	2	1	4	-
FT Jackson, SC	-	-	-	-	-	-	-	-	-	-
FT McClellan, AL	-	-	1	-	-	1	-	-	1	-
FT Rucker, AL	-	4	-	-	-	-	-	-	-	-
FT Stewart, GA	-	1	1	-	-	5	-	-	1	-
SOUTHWEST RMC										
Wm Beaumont AMC	80	-	-	-	3	1	-	1	5	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	2	6	-	-	1	1	-	-	-	-
NORTHWEST RMC										
Madigan AMC	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	6	-	86	1	-	-	-	-	-	-
PACIFIC RMC										
Tripler AMC	33	-	1	-	1	1	-	1	-	-
OTHER LOCATIONS										
Europe	-	1	-	-	1	5	2	4	5	1
Korea	5	1	2	-	-	3	1	9	7	-
Total	624	66	164	1	32	43	21	24	80	11

\* Based on date of onset.

\*\* Reports are included from main and satellite clinics. Not all sites reporting.

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**TABLE I. Cases of selected notifiable conditions, United States Army\* (continued)**  
**December, 1996**

Reporting MTF/Post**	Salmonellosis			Shigella			Campylobacteriosis			Tuberculosis	
	Active Duty	Other		Active Duty	Other		Active Duty	Other		Active Duty	Other
		Adult	Child		Adult	Child		Adult	Child		
	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996	Cum. 1996
<b>NORTH ATLANTIC RMC</b>											
Walter Reed AMC	2	2	5	-	3	1	6	8	2	-	-
Aberdeen Prov. Ground	-	-	-	-	-	-	-	-	-	-	-
FT Belvoir, VA	2	3	8	5	7	12	2	3	2	-	-
FT Bragg, NC	5	4	23	11	6	28	5	2	1	-	-
FT Drum, NY	2	-	-	-	-	-	-	-	-	-	-
FT Eustis, VA	-	2	3	-	2	3	-	1	4	-	-
FT Knox, KY	-	1	1	-	-	-	-	-	-	-	-
FT Lee, VA	-	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	6	5	2	1	1	-	-	-	-	2
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>											
Fitzsimons AMC	-	-	-	-	1	-	-	-	-	-	-
<b>GREAT PLAINS RMC</b>											
Brooke AMC	-	-	-	-	-	-	-	-	-	-	1
FT Carson, CO	1	-	2	1	-	-	1	-	1	-	-
FT Hood, TX	-	-	-	-	-	-	-	-	-	-	-
FT Leavenworth, KS	-	-	-	1	-	-	1	-	1	-	-
FT Leonard Wood, MO	-	-	4	-	-	-	-	-	-	-	-
FT Polk, LA	-	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	-	-	-	-	-	-	-	-	-	-	-
Panama	1	2	24	3	1	8	3	7	20	-	2
<b>SOUTHEAST RMC</b>											
Eisenhower AMC	1	-	-	-	-	1	-	-	-	-	1
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	1	1	-	-	1	2	4	4	2	-	1
FT Jackson, SC	-	-	1	-	-	-	-	-	-	1	1
FT McClellan, AL	-	-	-	-	1	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	1	-	2	-	-	-	-	-	-	-	1
<b>SOUTHWEST RMC</b>											
Wm Beaumont AMC	1	1	4	-	-	1	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHWEST RMC</b>											
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	-	-	1	-	-	-	-
<b>PACIFIC RMC</b>											
Tripler AMC	1	-	3	2	-	-	9	7	7	-	2
<b>OTHER LOCATIONS</b>											
Europe	13	11	16	-	-	-	4	7	3	4	4
Korea	-	1	-	-	-	-	-	-	-	3	2
<b>Total</b>	<b>31</b>	<b>34</b>	<b>101</b>	<b>25</b>	<b>23</b>	<b>57</b>	<b>36</b>	<b>39</b>	<b>43</b>	<b>8</b>	<b>17</b>

\* Based on date of onset.

\*\* Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Jan-97

**TABLE II. Cases of notifiable sexually transmitted diseases, United States Army  
December, 1996**

Reporting MTF/Post*	Chlamydia		Urethritis non-spec.		Gonorrhea		Herpes Simplex		Syphilis Prim/Sec		Syphilis Latent		Other STDs**	
	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996	Cur. Month	Cum. 1996
<b>NORTH ATLANTIC RMC</b>														
Walter Reed AMC	5	88	2	42	3	42	1	54	-	3	3	7	-	9
Aberdeen Prov. Ground	-	18	1	18	-	14	-	3	-	-	-	-	-	-
FT Belvoir, VA	-	51	-	1	-	14	-	2	-	-	-	-	-	-
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Drum, NY	7	72	2	22	2	66	-	15	-	-	-	-	-	1
FT Eustis, VA	-	70	-	-	-	22	-	-	-	-	-	-	-	-
FT Knox, KY	-	117	-	-	-	57	-	53	-	-	-	3	-	-
FT Lee, VA	7	92	-	1	2	41	-	2	-	-	-	-	-	-
FT Meade, MD	-	36	-	32	-	6	-	22	-	1	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>														
Fitzsimons AMC	-	1	-	-	-	-	-	-	-	-	-	1	-	-
<b>GREAT PLAINS RMC</b>														
Brooke AMC	-	9	-	-	-	1	-	-	-	-	-	-	-	-
FT Carson, CO	-	249	-	254	-	85	-	29	-	1	-	1	-	-
FT Hood, TX	-	231	-	81	-	75	-	30	-	2	-	-	-	2
FT Leavenworth, KS	1	19	-	-	-	7	-	4	-	-	-	-	-	-
FT Leonard Wood, MO	1	83	-	36	1	24	-	3	-	-	-	-	-	-
FT Polk, LA	-	23	-	-	-	12	-	2	-	-	-	-	-	-
FT Riley, KS	-	109	-	-	-	28	-	2	-	-	-	-	-	1
FT Sill, OK	-	136	-	40	-	73	-	15	-	-	-	-	-	7
Panama	-	89	-	-	-	5	-	9	-	-	-	-	-	11
<b>SOUTHEAST RMC</b>														
Eisenhower AMC	5	142	-	1	2	52	1	69	-	2	-	-	-	1
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	16	416	-	-	11	150	1	26	-	3	-	-	-	2
FT Jackson, SC	-	278	-	-	-	15	-	11	-	-	-	-	-	3
FT McClellan, AL	-	19	-	-	-	15	-	-	-	1	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	59	-	165	-	82	-	39	-	2	-	1	-	7
<b>SOUTHWEST RMC</b>														
Wm Beaumont AMC	17	225	-	-	-	25	-	67	-	-	1	4	2	3
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	-	24	-	-	-	11	-	2	-	-	-	1	-	-
<b>NORTHWEST RMC</b>														
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	23	-	-	-	2	-	3	-	-	-	-	-	-
<b>PACIFIC RMC</b>														
Tripler AMC	12	187	-	-	10	51	10	83	-	-	-	2	-	-
<b>OTHER LOCATIONS</b>														
Europe	-	125	-	6	-	49	-	11	-	-	-	-	-	2
Korea	-	14	-	-	-	6	-	5	-	-	-	-	-	3
<b>Total</b>	<b>71</b>	<b>3005</b>	<b>5</b>	<b>699</b>	<b>31</b>	<b>1030</b>	<b>13</b>	<b>561</b>	<b>0</b>	<b>15</b>	<b>4</b>	<b>20</b>	<b>2</b>	<b>52</b>

\* Reports are included from main and satellite clinics. Not all sites reporting.

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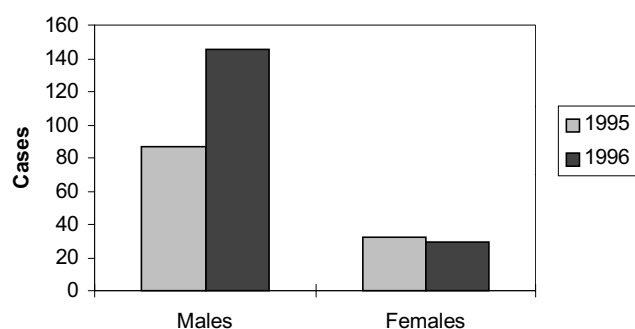
\*\* Other STDs: (a) Chancroid (b) Granuloma Inguinale (c) Lymphogranuloma Venereum (d) Syphilis unsp. (e) Syph, tertiary (f) Syph, congenital

*Continued from page 3*

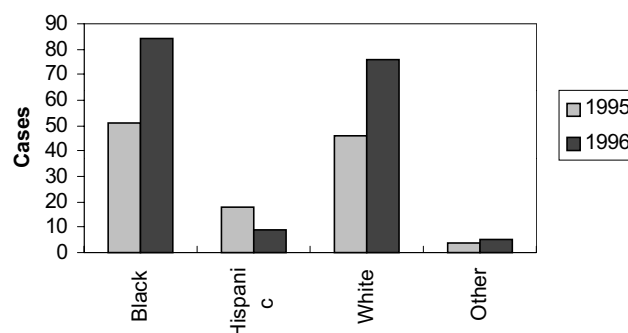
Whites when exposed to comparable cold stresses. In addition, soldiers in their twenties are likely to be in stages of their Army careers that increase their exposures to cold (e.g., time and activities outdoors) in relation to those more senior. Female soldiers had more CWI than expected overall but the increase was not statistically significant. Finally, soldiers from Georgia and Alabama had significantly more CWI than expected based on their representation in the Army. Black soldiers from Georgia, Florida, and Alabama (also New York and Massachusetts) and other racial/ethnic

minority soldiers from Texas had significantly more CWI than expected. It is possible that soldiers from “sunbelt states” may have less experience with — and fewer techniques for protecting themselves from — severe cold weather. Regardless of prior residence or experience, all soldiers should be informed and chains of command should enforce compliance with cold weather protective measures. Medical staffs should identify and treat cold injuries as early as possible to limit the severity and duration of resulting disabilities.

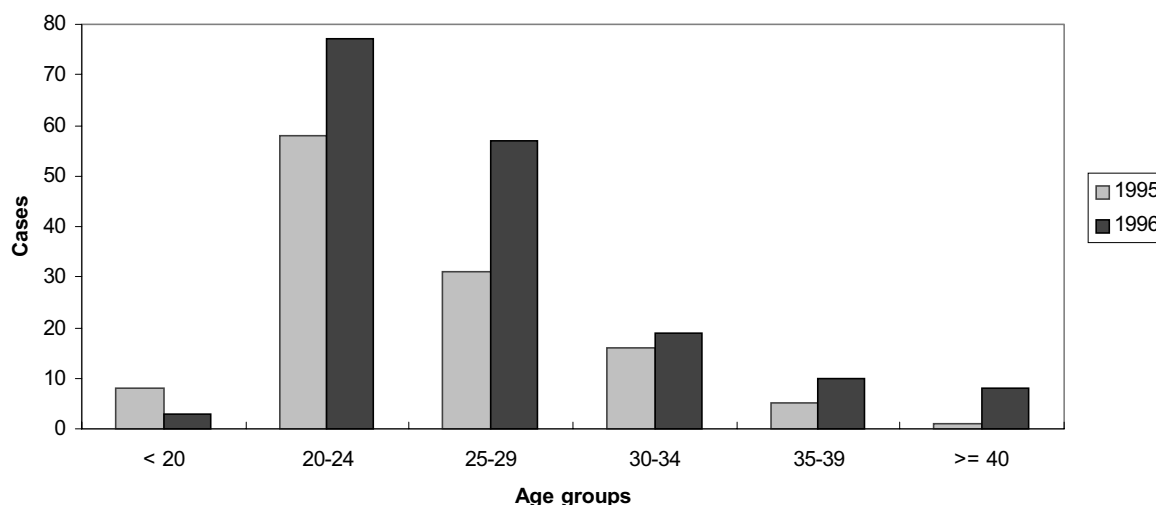
**Figure 2. Reported cold weather injuries by gender, 1995-1996**



**Figure 3. Reported cold weather injuries by race/ethnicity, 1995-1996**



**Figure 4. Reported cold weather injuries by age group, 1995-1996**





Outbreak Reports

## Gastroenteritis Outbreaks Among Military Trainees November-December 1996

**Outbreak #1**

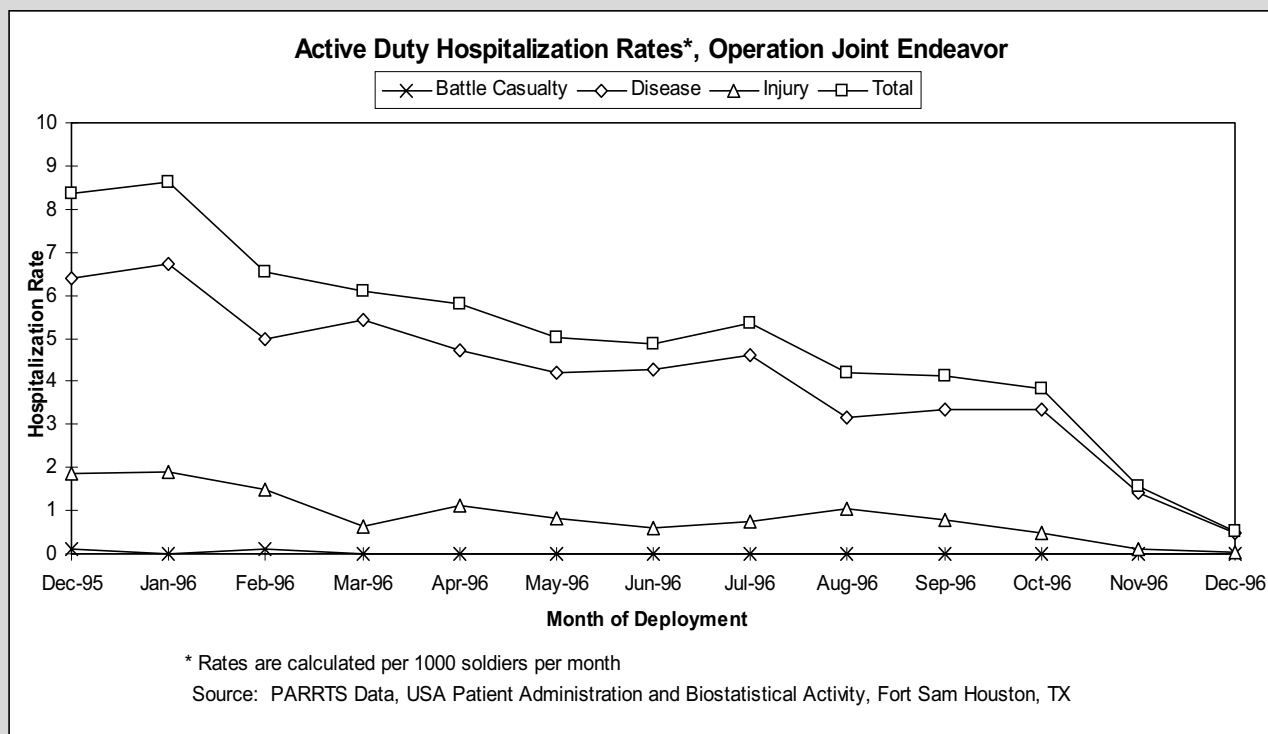
On Friday, 22 November 1996, the consolidated troop medical clinic at Fort Leonard Wood, Missouri, noted that a large number of soldiers from a single battalion presented to sick call with complaints of nausea, vomiting, abdominal pain, and diarrhea. Most cases were afebrile. A review of patient records documented a total of 127 gastroenteritis cases of whom 66 were hospitalized. A review of medical logs revealed that no other units on the installation were affected.

Several affected soldiers were interviewed to identify potential sources of contamination. Food

items of concern were included in a questionnaire that elicited information regarding food consumption (items and mealtimes) and the nature and times of onset of symptoms. The questionnaire was delivered to all available affected soldiers and an equal number of non-affected soldiers from the same unit. Food from the dining facility and stool and vomitus from hospitalized cases were cultured. Sanitation practices and hygienic conditions were assessed in the dining facility and in barracks of the affected unit.

Questionnaires were completed by 71 affected and 74 non-affected soldiers. The typical case presentation included cramping, abdominal

*Continued on page 10*

**Surveillance Trends, Bosnia\*\***

Bosnia Update**TABLE III. Active Duty Hospitalization Rates\*, Operation Joint Endeavor, 11Dec95 - 7Jan97**

ICD-9 Category	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
Infectious and Parasitic Diseases	19.0	4.4	3.0	3.4	1.9	0.9	3.3	12.6	4.8	5.3	8.3	0.0	0.0	4.5	3.5
Neoplasms	2.4	0.3	0.4	0.4	0.6	0.9	0.5	12.6	1.9	0.0	0.0	2.2	0.0	1.1	0.6
Endocrine, Nutritional, and Metabolic Disease and Immunity Disorders	2.4	0.3	0.7	0.4	0.3	1.2	0.6	0.0	1.0	0.0	6.6	0.0	0.0	1.4	0.7
Diseases of the Blood and Blood-Forming Organs	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Mental Disorders	7.1	3.6	2.3	1.5	1.0	1.5	2.3	0.0	4.8	6.4	0.0	4.5	2.4	4.0	2.5
Diseases of the Nervous System and Sense Organs	9.5	2.6	2.9	1.1	3.6	0.9	2.4	0.0	2.9	6.4	6.6	4.5	0.0	4.3	2.6
Diseases of the Circulatory System	2.4	1.3	1.9	4.0	5.2	3.4	2.7	0.0	0.0	1.1	0.0	6.7	2.4	1.4	2.5
Diseases of the Respiratory System	0.0	4.0	2.6	3.2	1.9	2.8	3.0	0.0	10.5	4.3	3.3	4.5	2.4	5.7	3.3
Diseases of the Digestive System	16.6	10.2	7.2	6.3	4.5	3.7	7.3	50.4	10.5	8.5	3.3	9.0	2.4	8.5	7.5
Diseases of the Genitourinary System	2.4	2.6	4.0	4.2	3.2	3.7	3.5	0.0	29.7	15.0	5.0	6.7	9.5	15.6	4.9
Complications of Pregnancy, Childbirth, and the Puerperium**	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	1.1	1.7	0.0	0.0	1.4	0.2
Diseases of the Skin and Subcutaneous Tissue	7.1	3.2	1.2	1.7	1.0	0.9	1.9	0.0	1.9	0.0	3.3	2.2	0.0	1.4	1.8
Diseases of Musculoskeletal System and Connective Tissue	7.1	5.4	6.3	5.9	3.2	3.4	5.3	0.0	4.8	3.2	0.0	11.2	7.2	4.5	5.2
Congenital Abnormalities	2.4	0.4	0.4	0.2	0.3	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Symptoms, Signs, and ill-Defined Conditions	7.1	7.1	6.0	6.1	4.5	3.1	5.8	88.2	27.8	9.6	13.2	6.7	4.8	16.4	7.1
Injury and Poisoning	14.2	14.8	10.4	9.5	6.5	3.1	10.2	37.8	22.0	5.3	5.0	9.0	0.0	10.8	10.3
<b>All Hospitalizations</b>	<b>99.6</b>	<b>60.2</b>	<b>49.2</b>	<b>47.9</b>	<b>38.0</b>	<b>29.4</b>	<b>49.2</b>	<b>201.7</b>	<b>125.4</b>	<b>66.2</b>	<b>56.3</b>	<b>67.4</b>	<b>31.0</b>	<b>81.1</b>	<b>52.9</b>

\* Rates are calculated per 1000 soldiers per year based on cumulative person time.

\*\* Includes normal delivery

*Continued from page 8*

pain, nausea, vomiting, and diarrhea. Most cases had onset of symptoms more than seven hours after the last prior meal.

Several food items served within two days of onset of the outbreak were associated with gastroenteritis. These items included chili and beef dishes, fried chicken, and gravy. Lunch on the day prior to the outbreak was prepared in garrison and shipped to the field in insulated metal containers. Cases occurred not only among soldiers who ate in the field but also among soldiers who ate only in garrison.

No cultures of cases, either aerobic or anaerobic, produced significant growth. However, *Enterobacter agglomerans*, a gram negative coliform bacteria, was isolated from numerous salad bar items (i.e., egg salad, potato salad, cucumbers, fruit salad, raisins, cheese, lettuce, raw vegetables, bean salad, cottage cheese, and Jell-O) that were served at lunch two days prior to the outbreak. Soldiers who ate these salad bar items were more likely than others to have gastroenteritis.

Assessment of sanitation practices in the dining facility revealed that some soldiers had gastrointestinal symptoms while they served food during the implicated lunch. In addition, the kitchen latrine, the wash room used by food handlers, and latrines in barracks areas lacked toilet paper, paper towels, and soap.

Results of the epidemiologic investigation suggested that the outbreak was foodborne, food items prepared and served in the battalion's dining facility may have been contaminated at their source or by infected food handlers, and the outbreak may have been exacerbated by poor sanitary and hygienic conditions in the dining facility and in troop living areas.

No new cases presented more than two days after the initial manifestation of the outbreak.

*Information provided by Richard W. Smerz, COL, MC, Commander and Preventive Medicine Officer, UAMEDDAC, Fort Leonard Wood, Missouri.*

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## Outbreak #2

Beginning the evening of Sunday, 14 December, 1996, and continuing to the following morning, 62 trainees at Fort Knox, Kentucky, were evaluated at Ireland Army Community Hospital for acute onset of watery diarrhea and vomiting. Most were afebrile. Forty-four of the affected trainees were from a single unit, and the other 18 were from a neighboring unit. An initial assessment implicated food that was prepared and consumed on post but outside of a military dining facility. The suspect meal was consumed 30-40 hours prior to the onset of symptoms in most cases.

A questionnaire was prepared that elicited information regarding the nature and times of onset of symptoms as well as the times, locations, and items of food and drink ingested during the previous week. The questionnaire was completed by 239 trainees in the affected units. Results of analyses are pending.

No new cases of acute gastroenteritis occurred in affected units after the initial tightly clustered wave.

*Information provided by Lea Ann Young, Epidemiology Technician, Preventive Medicine Service, USAMEDDAC, Fort Knox, Kentucky*

Report from the field**Tetanus, Fort Bragg, North Carolina**

On 4 December 1996, a 33 year old female native of Germany was admitted to Womack Army Medical Center, Fort Bragg, North Carolina, for muscle tightness. Three days prior to admission, she received abrasions to her hands and face during a motor vehicle accident. At the time of her hospitalization, she had tonic contractions of the muscles of her head and neck which hindered her ability to open her mouth ("lockjaw"). The patient's last immunization against tetanus was more than twenty years earlier when she was 13 years old. She was diagnosed with tetanus and treated with antitoxin. She was released from the hospital on 6 December without complications or sequelae of her illness.

*Information provided by Mr. Robert Oyler, PA-C, Preventive Medicine Service, Womack Army Medical Center, Fort Bragg, North Carolina.*

**Editorial comment:** Tetanus is a life threatening illness caused by toxin of the spore-forming anaerobic gram positive bacillus, *Clostridium tetani*. Tetanus spores are ubiquitous in soil. As such, they contaminate "dirty" materials that commonly penetrate skin and other soft tissues during lacerations, abrasions, burns, and other injuries – including those that otherwise are minor.

Tetanus is a noninvasive microorganism; thus, it causes disease only when its spores are inoculated into sites capable of supporting anaerobic growth of the bacteria. As tetanus bacilli grow, they elaborate a potent neurotoxin that spreads in the blood and causes systemic, involuntary muscle contractions. Lockjaw, a common name for tetanus, is descriptive of the involuntary contractions of the muscles of the head and neck that frequently characterize the early stages of the disease. As the disease progresses, there may be prolonged, painful spasms of muscles throughout the body, including those of the larynx, chest, and diaphragm. Eventually, apnea, atelectasis, pneumonia, and nervous system instability may lead to respiratory failure, multisystem dysfunction, and death<sup>1</sup>. Case

fatality rates are 10-90%<sup>2</sup> depending on the age and underlying health status of the patient, the nature of the precipitating injury, and the knowledge, experience, and resources of the hospital and the attending staff.

In the United States, between 1987 and 1995, an average of 51 cases of tetanus were reported to the CDC per year (range: 41-64)<sup>3</sup>. Through mid-December of 1996, only 27 cases of tetanus had been reported<sup>4</sup>. Tetanus can be prevented by active immunization with tetanus toxoid. In the United States, routine immunizations are begun in infancy and continue throughout life. Adults who have completed a primary series should be boosted at least every ten years. More frequent booster immunizations should be given in response to potentially contaminated injuries (e.g., massive or "dirty" wounds, burns, punctures)<sup>2</sup>.

Active immunity to tetanus is critical to soldiers since wounds and other traumatic injuries are relatively common in military operations. However, since tetanus is ubiquitous, deadly, and preventable, it is important to ensure that all beneficiaries of the military health care system – from infants to the elderly – achieve and maintain immunologic protection against tetanus. To this end, all contacts between beneficiaries and health care providers should be considered opportunities to assess – and if indicated enhance – immunity to tetanus and other vaccine preventable diseases. In this regard, particular attention should be paid to the immunization needs of spouses and other family members who were born and raised outside the United States.

**References:**

1. Wassilak, SGF, Brink, EW. Tetanus, in Maxcy-Rosenau-Last Public Health and Preventive Medicine. Last, JM, Wallace, RB (eds). 1992, 13<sup>th</sup> edition: 76-8.
2. Benenson, AS (ed). Control of communicable diseases manual. American Public Health Association, 1995; 16<sup>th</sup> edition: 459-63.
3. Centers for Disease Control and Prevention. Summary of notifiable diseases, United States, 1995. MMWR, 1995; 44(53):74-7.
4. Centers for Disease Control and Prevention. MMWR, 1995; 45(50):1109.

**TABLE S1. Notifiable conditions reported through Medical Surveillance System, Jan-Dec 1996\***

Diagnosis	Jan '96	Feb '96	Mar '96	Apr '96	May '96	Jun '96	Jul '96	Aug '96	Sep '96	Oct '96	Nov '96	Dec '96	Total
Amebiasis	1	-	1	3	1	1	-	-	-	1	1	-	9
Anthrax	-	-	-	-	-	-	-	-	-	-	-	-	0
Arboviral fever, unsp	-	-	-	-	-	-	-	-	-	-	-	-	0
Asbestosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Botulism	-	-	-	-	-	-	-	-	-	-	-	-	0
Brucellosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Campylobacteriosis	12	9	7	10	11	12	15	18	8	11	3	6	122
Carbon monoxide intx	-	-	-	-	-	-	-	-	-	-	-	1	1
Chancroid	-	-	-	-	-	-	-	-	-	-	-	-	0
Chemical agent exp	-	-	1	-	-	-	-	-	8	-	-	-	9
Chlamydia	326	319	317	344	299	311	223	242	285	198	106	86	3056
Cholera	-	-	-	-	-	-	-	-	-	-	-	-	0
Coccidioidomycosis	-	-	-	-	-	-	-	-	-	-	-	-	0
CWI, unspecified	9	4	2	-	-	-	-	-	-	2	1	-	18
CWI, frostbite	101	21	4	-	-	-	-	-	-	1	6	3	136
CWI, hypothermia	-	-	-	-	-	-	-	-	-	-	-	-	0
CWI, immersion type	13	2	-	-	-	1	-	-	-	-	-	-	16
Dengue fever	-	-	-	-	-	-	-	-	-	-	-	-	0
Diphtheria	-	-	-	-	-	-	-	-	-	-	-	-	0
Ehrlichiosis	-	-	-	1	-	-	-	-	-	-	-	-	1
Encephalitis	-	-	-	1	-	-	-	-	1	-	-	-	2
Giardiasis	6	2	8	5	4	9	11	16	8	7	1	1	78
Gonorrhea	130	89	76	100	91	103	101	103	111	67	42	36	1049
Granuloma Inguinale	-	-	-	-	-	1	-	-	-	-	-	-	1
Guillain-Barre Syndrome	-	-	1	-	1	-	1	-	-	-	-	-	3
H. influenzae, inv	-	-	-	-	-	-	-	-	-	1	-	1	2
Heat exhaustion	1	-	2	2	6	14	17	16	4	2	9	-	73
Heat stroke	-	1	1	1	7	8	2	3	2	1	-	-	26
Hemorrhagic fever	-	-	-	1	-	-	-	-	-	-	-	-	1
Hepatitis A, Acute	1	6	4	1	3	2	1	-	1	9	3	2	33
Hepatitis B, Acute	3	3	7	2	10	4	4	4	3	1	4	-	45
Hepatitis C, Acute	2	5	2	2	1	1	2	1	-	3	1	1	21
Hepatitis, unspec	-	1	-	1	-	1	2	-	-	1	2	-	8
Herpes Simplex	79	66	64	55	45	69	39	50	48	25	12	16	568
Influenza	-	-	-	-	-	-	-	-	-	-	-	-	0
Influenza, unspec.	2	11	14	-	-	1	2	11	-	-	4	7	52
Kawasaki syndrome	1	-	-	-	1	4	-	-	-	-	-	-	6
Lead poisoning	1	-	-	-	-	3	-	-	1	1	-	-	6
Legionellosis	-	-	-	-	-	-	-	2	-	-	-	2	4
Leish, cutaneous	1	-	5	3	2	5	1	-	-	-	-	-	17
Leish, mucocutaneous	-	-	-	-	1	-	-	-	-	-	-	-	1
Leish, unspecified	-	-	1	2	1	-	-	-	-	-	-	-	4
Leish, visceral	-	-	-	-	-	-	-	-	-	-	-	-	0
Leprosy	-	-	-	-	-	-	-	-	-	-	-	-	0
Leptospirosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Listeriosis	-	-	-	-	-	-	-	1	-	-	-	1	2
Lyme disease	1	-	-	1	-	7	5	1	3	1	-	-	19
Lymphogranuloma Vhnm	-	-	1	1	1	1	-	-	3	2	-	-	9

(Continued)

**TABLE S1. Notifiable conditions reported through Medical Surveillance System\* (continued).**

Diagnosis	Jan '96	Feb '96	Mar '96	Apr '96	May '96	Jun '96	Jul '96	Aug '96	Sep '96	Oct '96	Nov '96	Dec '96	Total
Malaria, unspecified	-	-	-	-	-	1	-	1	-	1	-	1	4
Malaria, vivax	1	1	1	-	-	1	-	2	5	2	-	-	13
Malaria, falciparum	1	-	-	3	3	-	1	2	-	1	-	1	12
Malaria, malariae	-	-	-	-	-	-	-	-	-	-	-	-	0
Malaria, ovale	-	-	-	-	-	-	-	-	-	-	-	-	0
Measles	-	-	-	-	1	1	-	-	1	-	-	-	3
Meningitis, Viral	2	1	10	5	3	-	2	8	4	1	1	1	38
Meningitis, Bact.	2	-	1	3	1	1	1	2	1	1	1	-	14
Mercury intoxication	-	-	-	-	-	-	-	-	-	-	-	-	0
Mumps (adults only)	2	-	-	1	-	-	-	-	1	-	-	-	4
Mycobacterial inf.	-	-	-	-	-	-	-	-	-	-	-	-	0
Pertussis	-	1	-	-	-	-	1	-	-	-	1	-	3
Plague	-	-	-	-	-	-	-	-	-	-	-	-	0
Pneumococcal pneum.	-	-	-	-	-	-	-	-	-	-	-	-	0
Poliomyelitis	-	-	-	-	-	-	-	-	-	-	-	-	0
Psittacosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Q fever	-	-	-	-	-	-	-	-	-	-	-	-	0
Rabies, human	-	-	-	-	-	-	-	-	-	-	-	-	0
Radiation injury	-	-	-	-	-	-	-	-	-	-	-	-	0
Relapsing fever	-	-	-	-	-	-	-	-	-	-	-	-	0
Reye syndrome	-	-	-	-	-	-	-	-	-	-	-	-	0
Rhabdomyolysis	8	5	4	4	5	2	3	2	1	1	1	-	36
Rheumatic fever	-	-	-	-	-	1	-	-	-	-	-	-	1
Rift Valley Fever	-	-	-	-	-	-	-	-	-	-	-	-	0
RMSF	-	1	1	1	-	-	-	1	1	-	-	-	5
Rubella	-	1	-	-	-	-	-	-	-	-	-	-	1
Salmonellosis	11	6	12	9	17	14	26	23	23	17	8	2	168
Schistosomiasis	-	-	-	-	-	-	-	-	-	-	-	-	0
Shigellosis	2	3	3	6	8	5	15	11	27	25	2	1	108
Smallpox	-	-	-	-	-	-	-	-	-	-	-	-	0
Syphilis, unspec.	5	2	-	6	2	9	3	3	1	-	-	1	32
Syphilis, prim/sec	4	2	1	3	1	-	2	1	-	1	1	1	17
Syphilis, latent	2	1	4	2	2	1	-	-	4	2	1	4	23
Syphilis, tertiary	2	-	-	-	3	-	3	-	-	1	-	1	10
Syphilis, congenital	-	-	-	-	-	-	-	-	-	1	-	-	1
Tetanus	-	-	-	-	-	-	-	-	-	-	-	1	1
Toxic shock syndrome	-	-	-	-	-	-	-	-	-	-	1	-	1
Toxoplasmosis	-	-	-	-	-	-	-	-	-	-	-	-	0
Trichinellosis	-	-	-	1	-	-	-	-	-	-	-	-	1
Trypanosomiasis,Afr	-	-	-	-	-	-	-	-	-	-	-	-	0
Trypanosomiasis,Amer	-	-	-	-	-	-	-	-	-	-	-	-	0
Tuberculosis (TB)	3	7	2	2	5	1	2	1	1	-	1	-	25
Tularemia	-	-	-	-	-	-	-	-	-	-	-	-	0
Typhoid fever	-	-	-	-	-	-	-	-	-	-	-	-	0
Typhus fever	-	-	-	-	-	-	-	-	-	-	-	-	0
Urethritis, Non-specific	65	69	60	82	71	87	77	56	54	59	16	10	706
Vaccine advrs event	-	1	22	-	-	2	-	-	-	-	1	-	26
Varicella,adult only	11	21	12	9	10	8	8	-	1	3	8	4	95
Yellow fever	-	-	-	-	-	-	-	-	-	-	-	-	0
<b>Total</b>	<b>811</b>	<b>661</b>	<b>651</b>	<b>673</b>	<b>617</b>	<b>692</b>	<b>570</b>	<b>581</b>	<b>611</b>	<b>450</b>	<b>238</b>	<b>191</b>	<b>6746</b>

\* Based on date of onset.

**TABLE S2. Reported heat and cold weather injuries, United States Army, \***  
**January, 1996 - December, 1996**

Reporting MTF/Post**	Heat Injuries				Cold Weather Injuries							
	Heat Exhaustion		Heat Stroke		Frostbite		Hypothermia		Immersion		Unspecified	
	M	F	M	F	M	F	M	F	M	F	M	F
<b>NORTH ATLANTIC RMC</b>												
Walter Reed AMC	-	-	1	-	-	-	-	-	-	-	-	-
Aberdeen Prov. Ground	1	-	-	-	-	-	-	-	-	-	3	-
FT Belvoir, VA	2	-	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	7	2	10	1	3	-	-	-	1	-	4	-
FT Drum, NY	7	-	-	-	16	-	-	-	9	1	-	-
FT Eustis, VA	-	-	1	-	-	-	-	-	-	-	-	-
FT Knox, KY	-	-	-	-	2	-	-	-	-	-	-	-
FT Lee, VA	-	-	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	-	-	-	-	-	-	-	-	-	-	1	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>												
Fitzsimons AMC	-	-	-	-	-	-	-	-	-	-	-	-
<b>GREAT PLAINS RMC</b>												
Brooke AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	-	-	-	-	22	6	-	-	-	-	4	-
FT Hood, TX	1	-	1	-	-	-	-	-	-	-	-	1
FT Leavenworth, KS	-	-	-	-	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	-	-	1	-	1	-	-	-	1	-	-	-
FT Polk, LA	-	-	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	1	-	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	4	-	-	-	1	-	-	-	-	-	-	-
Panama	1	-	1	-	-	-	-	-	-	-	-	-
<b>SOUTHEAST RMC</b>												
Eisenhower AMC	1	-	1	-	-	-	-	-	-	-	-	-
FT Benning, GA	2	-	6	-	1	-	-	-	-	-	-	-
FT Campbell, KY	4	-	1	-	-	-	-	-	-	-	4	-
FT Jackson, SC	-	-	-	-	-	-	-	-	-	-	-	-
FT McClellan, AL	-	-	-	-	-	1	-	-	-	-	-	-
FT Rucker, AL	4	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	-	-	-	-	-	-	-	-	-	-	-	-
<b>SOUTHWEST RMC</b>												
Wm Beaumont AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	6	-	-	-	-	-	-	-	-	-	-	-
<b>NORTHWEST RMC</b>												
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	-	-	-	-	63	18	-	-	3	-	2	-
<b>PACIFIC RMC</b>												
Tripler AMC	-	-	-	-	-	-	-	-	1	-	-	-
<b>OTHER LOCATIONS</b>												
Europe	1	-	-	-	1	-	-	-	-	-	-	-
Korea	1	-	-	-	1	1	-	-	-	-	-	-
<b>Total</b>	<b>43</b>	<b>2</b>	<b>23</b>	<b>1</b>	<b>111</b>	<b>26</b>	<b>0</b>	<b>0</b>	<b>15</b>	<b>1</b>	<b>18</b>	<b>1</b>

\* Army active duty cases only.

\*\* Reports are included from parent and daughter clinics. Not all sites reporting.

Date of Report:

7-Jan-97

**TABLE S3. Cases of notifiable sexually transmitted diseases, United States Army, Jan-Dec 1996\***

Reporting MTF/Post**	Chlamydia				Urethritis non-spec.				Gonorrhea				Herpes Simplex				Syphilis Prim/Sec				Syphilis Latent			
	Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other		Active Duty		Other	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
<b>NORTH ATLANTIC RMC</b>																								
Walter Reed AMC	15	16	10	48	28	-	14	-	9	2	10	21	5	19	16	14	2	-	1	2	-	-	3	6
Aberdeen Prov. Ground	1	9	1	7	16	-	2	-	14	1	1	-	-	2	-	1	-	-	-	-	-	-	-	-
FT Belvoir, VA	13	14	5	19	-	-	-	1	3	3	4	4	1	1	-	-	-	-	-	-	-	-	-	-
FT Bragg, NC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Drum, NY	24	34	1	14	22	-	-	-	48	9	1	9	9	4	-	2	-	-	-	-	-	-	-	-
FT Eustis, VA	12	23	6	29	-	-	-	-	8	3	5	6	-	-	-	-	-	-	-	-	-	-	-	-
FT Knox, KY	41	21	5	50	-	-	-	-	36	9	1	11	30	3	1	19	-	-	-	-	2	-	-	1
FT Lee, VA	16	48	7	21	-	-	1	-	20	8	9	4	-	2	-	-	-	-	-	-	-	-	-	-
FT Meade, MD	5	6	10	15	13	-	19	-	-	-	4	2	6	5	5	6	-	-	-	1	-	-	-	-
USMA, West Point, NY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>CENTRAL RMC</b>																								
Fitzsimons AMC	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-
<b>GREAT PLAINS RMC</b>																								
Brooke AMC	-	1	2	6	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Carson, CO	98	71	10	70	233	-	21	-	54	9	7	15	9	5	3	12	-	-	1	-	-	-	-	1
FT Hood, TX	91	85	2	53	78	1	2	-	47	17	4	8	15	11	1	3	1	-	-	1	1	-	-	-
FT Leavenworth, KS	1	4	1	13	-	-	-	-	2	-	-	5	1	1	-	2	-	-	-	-	-	-	-	-
FT Leonard Wood, MO	13	24	6	43	28	-	11	-	10	6	4	5	1	-	-	2	-	-	-	-	-	-	-	-
FT Polk, LA	3	14	-	6	-	-	-	-	8	3	-	1	1	1	-	-	-	-	-	-	-	-	-	-
FT Riley, KS	39	27	7	36	-	-	-	-	16	7	-	5	1	1	-	-	-	-	-	-	-	-	-	-
FT Sill, OK	68	27	9	42	37	1	2	1	45	12	7	12	12	3	-	1	-	-	-	-	-	-	-	-
Panama	6	7	10	67	-	-	-	-	2	1	1	2	3	1	2	3	-	-	-	-	-	-	-	-
<b>SOUTHEAST RMC</b>																								
Eisenhower AMC	38	45	10	49	1	-	-	-	25	10	6	11	20	22	1	26	2	-	-	-	-	-	-	-
FT Benning, GA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Campbell, KY	80	213	3	140	1	-	-	-	98	30	8	18	23	1	-	2	2	-	-	1	-	-	-	-
FT Jackson, SC	9	265	1	5	-	-	-	-	6	7	1	1	-	10	1	-	-	-	-	-	-	-	-	-
FT McClellan, AL	3	6	3	7	-	-	-	-	2	2	7	4	-	-	-	-	-	1	-	-	-	-	-	-
FT Rucker, AL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Stewart, GA	3	37	1	18	155	3	9	-	63	11	2	7	13	12	-	14	2	-	-	-	1	-	-	-
<b>SOUTHWEST RMC</b>																								
Wm Beaumont AMC	47	46	6	126	-	-	-	-	15	3	3	5	5	26	3	33	-	-	-	-	1	-	-	3
FT Huachuca, AZ	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Irwin, CA	11	5	2	11	-	-	-	-	6	1	-	5	2	-	-	-	-	-	-	-	1	-	-	-
<b>NORTHWEST RMC</b>																								
Madigan AMC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FT Wainwright, AK	7	7	-	9	-	-	-	-	1	-	-	1	1	2	-	-	-	-	-	-	-	-	-	-
<b>PACIFIC RMC</b>																								
Tripler AMC	73	47	6	69	-	-	-	-	30	7	2	15	19	23	9	38	-	-	-	-	2	-	-	-
<b>OTHER LOCATIONS</b>																								
Europe	41	42	5	37	6	-	-	-	36	5	1	7	6	4	-	1	-	-	-	-	-	-	-	-
Korea	1	10	-	3	-	-	-	-	3	1	2	-	1	3	-	1	-	-	-	-	-	-	-	-
<b>Sub-Total</b>	<b>759</b>	<b>1154</b>	<b>129</b>	<b>1014</b>	<b>618</b>	<b>5</b>	<b>81</b>	<b>2</b>	<b>607</b>	<b>167</b>	<b>91</b>	<b>184</b>	<b>184</b>	<b>162</b>	<b>42</b>	<b>180</b>	<b>9</b>	<b>0</b>	<b>3</b>	<b>5</b>	<b>8</b>	<b>0</b>	<b>4</b>	<b>11</b>
<b>Total</b>	<b>1913</b>	<b>1143</b>	<b>623</b>	<b>83</b>	<b>774</b>	<b>275</b>	<b>346</b>	<b>222</b>	<b>9</b>	<b>8</b>	<b>8</b>	<b>15</b>												

\* Active Duty refers to Army Active Duty only.

\*\* Reports are included from main and satellite clinics. Not all sites reporting.

Date of Report: 7-Jan-97



### Wind Chill Chart

Wind Speed (mph)	Actual Temperature (F)											
	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
	<b>Equivalent Chill Temperature (F)</b>											
calm	50	40	30	20	10	0	-10	-20	-30	-40	-50	-60
5	48	37	27	16	6	-5	-15	-26	-36	-47	-57	-68
10	40	28	16	3	-9	-21	-33	-46	-58	-70	-83	-95
15	36	22	9	-5	-18	-32	-45	-58	-72	-85	-99	-112
20	32	18	4	-10	-25	-39	-53	-67	-82	-96	-110	-124
25	30	15	0	-15	-29	-44	-59	-74	-89	-104	-118	-133
30	28	13	-2	-18	-33	-48	-63	-79	-94	-109	-125	-140
35	27	11	-4	-20	-35	-51	-67	-82	-98	-113	-129	-145
40	26	10	-6	-22	-37	-53	-69	-85	-101	-117	-132	-148
	<b>Little Danger</b>			<b>Increasing Danger</b>				<b>Great Danger</b>				
(Wind Speeds greater than 40 mph have little additional effect)	(If less than 5 hrs with dry skin. Greatest hazard from false sense of security)			(exposed flesh may freeze within 1 minute)				(exposed flesh may freeze within 30 seconds)				

### Cold Weather Training Guidelines as a Function of Soldier Work Intensity and Wind-Chill Risk\*

Work Intensity	Wind Chill Risk*		
	Little Danger	Increased Danger	Great Danger
<b>High</b> Digging foxholes Running Marching with load Making or breaking bivouac	Increased surveillance by small unit leaders Black gloves optional - mandatory below 0° F Increased hydration	ECWCS** or equivalent Mittens with liners No facial camouflage Skin covered and kept dry Rest in warm, sheltered area Vapor barrier boots below 0° F	Postpone non-essential training Essential tasks only with < 15 minute exposure Work groups of no less than 2 Cover all exposed skin
<b>Low</b> Walking Marching without load Drill and ceremony	Increased surveillance Skin covered and dry Mittens and gloves with liner No facial camouflage below 10° F Full head cover below 0° F.	Restrict Non-essential training 30-40 minute work cycles to accomplish essential tasks Frequent supervisory surveillance for cold injuries.	Cancel Outdoor Training
<b>Sedentary</b> Sentry duty Eating, resting, sleeping, clerical work	Full head cover No facial camouflage below 10° F Vapor barrier boots below 0° F Mittens and gloves with liner	Postpone non-essential training 15-20 minute work cycles for essential tasks Work groups of no less than 2 personnel No exposed skin	Cancel Outdoor Training

ARD Surveillance UpdateLegend

—	ARD Rate	= (ARD cases / Trainees) * 100
■ ■ ■	SASI*	= ARD Rate * Strep Rate**

Ft Benning

Ft Jackson

Ft Knox

Ft Leonard  
Wood

Ft McClellan

Ft Sill

**Table IV. ARD surveillance rates, submitted by Army TRADOC posts**

\* Strep/ARD Surveillance Index (SASI)

\*\*Strep Rate= (GABHS(+)) / Cultures) \* 100

Note: SASI has proven to be a reliable predictor of serious strep-related morbidity, especially acute rheumatic fever.

**TABLE SX. Active Duty Force Strength by MTF, United States Army, August, 1996\***

MTF/Post**	Males							Females							All
	< 20	20-24	25-29	30-34	35-39	>= 40	Total M	< 20	20-24	25-29	30-34	35-39	>= 40	Total F	
NORTH ATLANTIC RMC															
Walter Reed AMC	141	1354	1442	1665	2041	3309	9952	22	411	525	517	510	556	2541	12493
Aberdeen Prov. Ground	293	630	390	444	442	353	2552	75	168	111	61	56	31	502	3054
FT Belvoir, VA	29	326	399	348	322	359	1783	16	106	110	99	86	62	479	2262
FT Bragg, NC	1763	12848	9415	6677	4349	2477	37529	221	1595	1286	735	451	220	4508	42037
FT Drum, NY	526	3789	2246	1396	962	479	9398	70	424	216	130	85	34	959	10357
FT Eustis, VA	347	1277	1048	980	897	884	5433	136	409	316	190	129	92	1272	6705
FT Knox, KY	1772	2422	1560	1370	1242	748	9114	33	172	177	127	112	80	701	9815
FT Lee, VA	342	767	667	622	530	408	3336	215	388	242	196	129	70	1240	4576
FT Meade, MD	59	779	1124	1022	884	1075	4943	24	300	321	250	214	161	1270	6213
USMA, West Point, NY	46	364	309	724	597	591	2631	10	71	65	116	93	73	428	3059
CENTRAL RMC															
Fitzsimons AMC	17	92	144	89	113	128	583	8	41	42	30	27	27	175	758
GREAT PLAINS RMC															
Brooke AMC	153	658	954	982	841	993	4581	152	378	391	390	301	310	1922	6503
FT Carson, CO	415	4244	3429	2390	1633	845	12956	72	587	418	238	150	82	1547	14503
FT Hood, TX	2325	13132	9136	5804	4005	2322	36724	342	2192	1493	816	563	274	5680	42404
FT Leavenworth, KS	36	309	213	618	812	602	2590	15	79	61	88	103	45	391	2981
FT Leonard Wood, MO	2211	1713	1025	1032	787	483	7251	834	488	238	171	90	73	1894	9145
FT Polk, LA	282	2301	1574	1206	751	414	6528	66	372	235	138	89	58	958	7486
FT Riley, KS	590	3357	2171	1393	961	475	8947	65	392	248	158	106	65	1034	9981
FT Sill, OK	2569	4042	2601	1845	1441	797	13295	71	391	301	181	106	68	1118	14413
Panama	49	800	863	749	635	497	3593	13	170	142	105	71	39	540	4133
SOUTHEAST RMC															
Eisenhower AMC	748	1982	1373	1219	1473	1218	8013	190	588	426	381	320	233	2138	10151
FT Benning, GA	3169	4268	3064	2030	1396	748	14675	104	444	353	214	126	71	1312	15987
FT Campbell, KY	1014	6881	5821	3636	2263	1092	20707	174	977	676	366	222	88	2503	23210
FT Jackson, SC	2413	1087	665	801	662	420	6048	1333	561	297	279	159	96	2725	8773
FT McClellan, AL	719	584	472	632	530	406	3343	247	270	155	122	93	54	941	4284
FT Rucker, AL	61	710	929	642	534	459	3335	26	151	129	82	65	34	487	3822
FT Stewart, GA	1048	6397	4474	2701	1869	1044	17533	161	963	664	329	219	95	2431	19964
SOUTHWEST RMC															
Wm Beaumont AMC	410	2312	1712	1213	1233	1109	7989	125	611	352	224	147	163	1622	9611
FT Huachuca, AZ	176	981	1055	848	681	512	4253	94	357	215	172	145	82	1065	5318
FT Irwin, CA	229	1306	932	759	532	312	4070	20	174	122	84	44	17	461	4531
NORTHWEST RMC															
Madigan AMC	685	5566	4244	2899	2016	1315	16725	120	912	671	378	260	191	2532	19257
FT Wainwright, AK	186	2120	1701	1034	647	316	6004	31	290	222	145	104	50	842	6846
PACIFIC RMC															
Tripler AMC	481	4191	3667	2317	1542	1007	13205	47	714	648	401	311	204	2325	15530
OTHER LOCATIONS															
Europe	1206	11867	11354	8127	6095	3790	42439	269	2433	2009	1311	946	549	7517	49956
Korea	1616	8318	6168	4589	3628	2177	26496	374	1450	1109	735	525	270	4463	30959
Unknown	1726	9563	8531	8603	6327	4152	38913 <sup>§</sup>	446	1510	1158	1051	735	388	5290 <sup>§</sup>	44900 <sup>§</sup>
Total	29852	123337	96872	73406	55673	38316	378554	6221	21539	16144	11010	7892	5005	62523	485990

\* Based on duty zip code. Does not account for TDY.

§ Includes unknown age groups and unknown gender.

\*\* Includes any subordinate catchment areas not listed separately.

Source: Defense Manpower Data Center (DMDC)



DEPARTMENT OF THE ARMY  
U.S. Army Center for Health Promotion  
and Preventive Medicine  
Aberdeen Proving Ground, MD 21010-5422

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